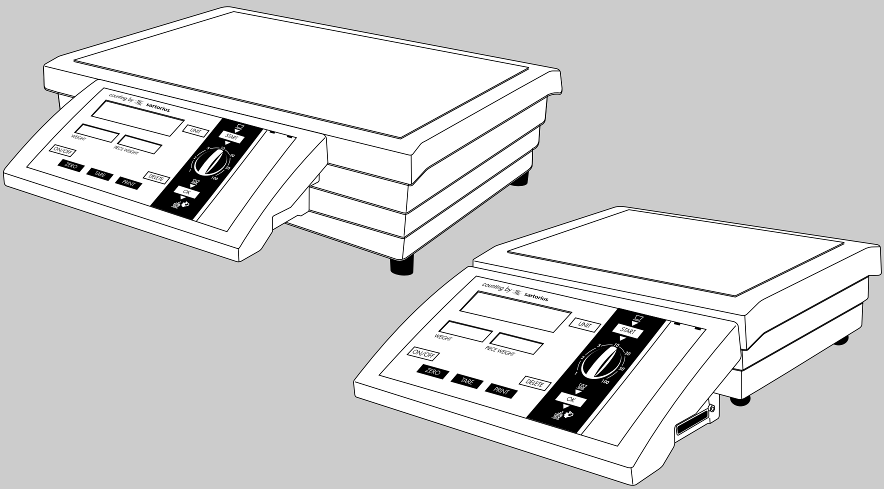
sartorius

Operating Instructions

Sartorius Counting Scales

CB Models
Electronic Precision Scales



98648-009-72

Intended Use

The models of the CB Series are precision scales designed for the measurement of mass covering a range from 0.01 g and 64 kg.

CB models meet the highest requirements on the accuracy and reliability of weighing results through the following features:
- Efficient filtering-out of unfavorable ambient conditions, such as vibration, drafts, etc.
- Stable and reproducible weighing results
- Excellent readability under any lighting conditions
- Rugged, durable weighing system

CB scales save work and speed up simple routine applications through these features:
- Reference sample quantity adjustable using the selector
- Mass unit conversion by toggling between units (second weight unit)
- Extremely fast response times of approx. 1 second
- Total ease of operation
- Runs on 6 size C alkaline manganese batteries rated to 1.5 V, max. 8,100 mAh
- Serial RS-232 port for connection to a PC
- Two lines in the printout are configurable to show your company name, for example

Contents

Warnings and Safety Precautions

The scale has been constructed in accordance with the European Directives as well as international regulations and standards for operation of electrical equipment, electromagnetic compatibility, and stipulated safety requirements. Improper use or handling, however, can result in property damage or personal injury.

Read these operating instructions thoroughly before using your scale to prevent damage to the equipment. Keep these instructions in a safe place for future reference.

Follow the instructions below to ensure safe and trouble-free operation of your scale:

⚠ Do not use this scale in a hazardous area/location

⚠ Only for use with LISTED direct plug in power supply.

⚠ CAUTION. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

⚠ Make sure that the voltage rating printed on the AC adapter is identical to your local line voltage

⚠ Warning When Using Prewired RS-232 Connecting Cables:
RS-232 cables purchased from other manufacturers often have incorrect pin assignments for use with Sartorius scales. Be sure to check the pin assignment against the respective chart before connecting the cable, and disconnect any lines marked "Internally Connected" (e.g., pin 6). Failure to do so may damage or even completely ruin your scale and/or peripheral device.

– The only way to turn the power off completely is to disconnect the AC adapter

– The scale housing is protected against penetration (ingress) of solid objects (IP30)

– Connect only Sartorius accessories and options, as these are optimally designed for use with your CB scale

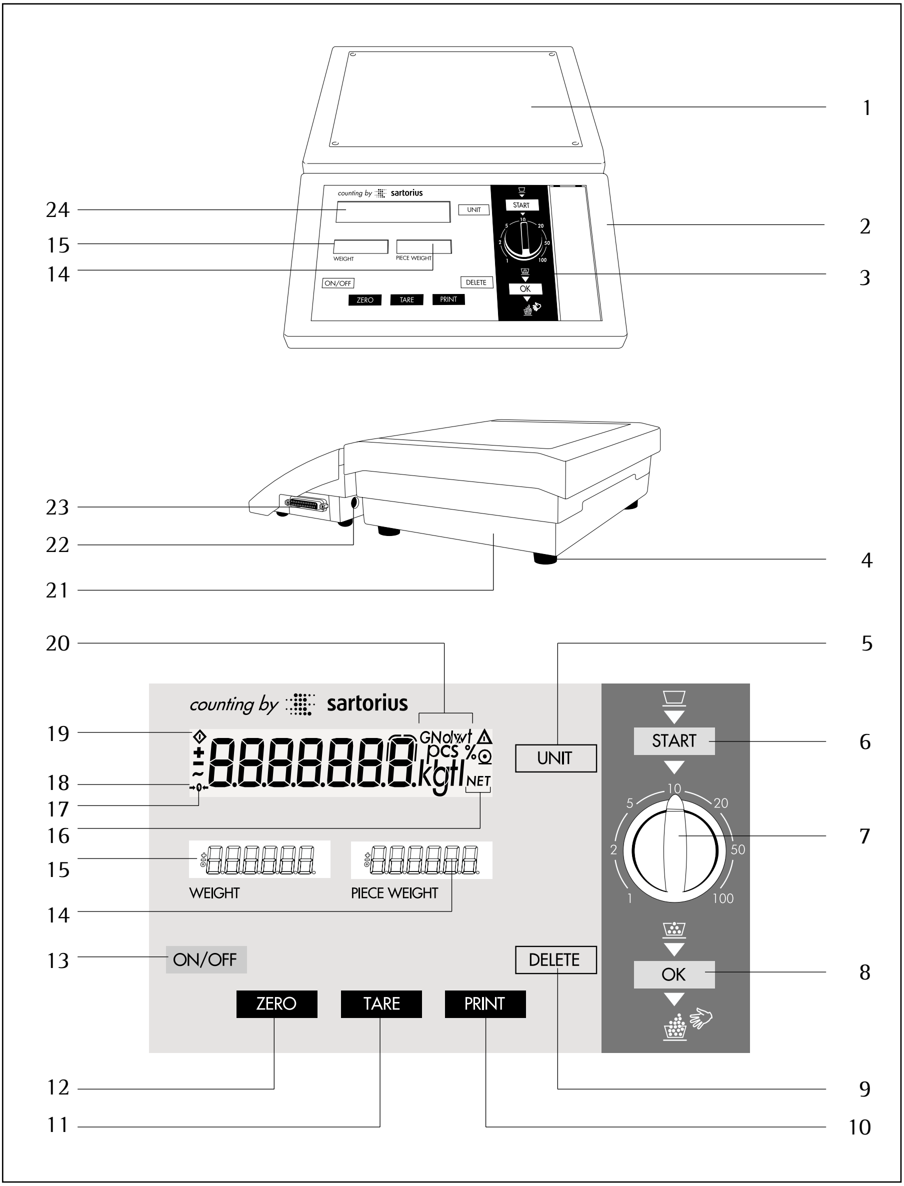
– Protect the AC adapter and the scale from moisture

When cleaning your scale, make sure that no liquid enters the scale housing; use only a slightly moistened cloth to clean the scale.

Do not open the scale housing.
In case you have any problems with your scale:

○ Contact your local Sartorius office, dealer or service center

General View of the Scale



Item	(Spare Part Order No.)
1 Weighing pan	(69C00036)
2 Battery compartment (below the control unit)	
3 Control unit	
4 Foot	(Set: 69C00038 not for CB...000CA models)

5 [UNIT] key: Toggles between 2 weight units or to counting mode

6 [START] key: starts measurement of the average piece weight

7 Selector: selects reference sample quantity

8 [OK] key: saves reference sample quantity

9 [DELETE] key: cancels operation
This key is generally used for the following:
- End counting
- Cancel a calibration/adjustment routine in progress

10 [PRINT] key: generates a printout
This key sends displayed values via the built-in data interface to an on-line Sartorius Data Printer or to a computer.

11 [TARE] key: tares (subtracts weight)
The weight of an empty container is subtracted so that the net weight of a sample in the container is always shown afterwards.

Item	(Spare Part Order No.)
12 [ZERO] key: zeros the display. Sets the display to zero. Zeroing is only allowed within the ± 2% range of the scale's maximum capacity.	
13 [ON/OFF] key: Switches the display on or off. (The scale remains energized in the standby mode – depending on the menu setting.)	
14 Display: average piece weight	
15 Weight display in the basic unit selected	
16 Shows that a value is in the tare memory	
17 Symbol for standby operation	
18 Symbol for zeroing	
19 "Busy" symbol	
20 Weight unit or piece count (pcs)	
21 Manufacturer's label	
22 DC jack	
23 Data interface port	
24 Main display	

Not shown:
Set of small parts (battery cover, selector, clear plastic overlay) (69C00039)

Getting Started

Storage and Shipping Conditions
Do not expose the scale to shock, vibration, moisture or extreme temperature.

Unpacking the Scale

● After unpacking the scale, check it immediately for any visible damage

○ If you see any sign of damage, proceed as directed in the chapter entitled “Care and Maintenance” under the section on “Safety Inspection”

Save the box and all parts of the packaging until you have successfully installed your scale. Only the original packaging provides the best protection for shipment. Before packing your scale, unplug all connected cables to prevent damage.

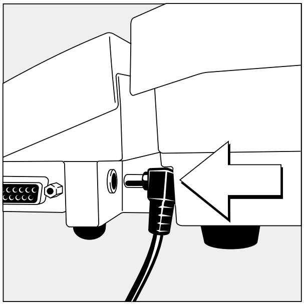
Equipment Supplied
The equipment supplied includes the components listed below:

- Scale with weighing pan mounted in place
- Plug-in AC adapter
- Operating instructions

Installation Instructions
CB scales are designed to provide reliable weighing results under normal ambient conditions. When choosing a location to set up your scale, observe the following so that you will be able to work with added speed and accuracy:

- Set up the scale on a stable, even surface
- Avoid placing the scale next to a heater or exposing the scale to direct sunlight
- Protect the scale from direct drafts that come from open windows or doors
- Avoid exposing the scale to strong vibration during weighing
- Protect the scale from aggressive chemical vapors
- Avoid exposing the scale to extreme moisture

Conditioning the Scale:
Moisture in the air can condense on the surfaces of a cold scale whenever it is brought into a substantially warmer place. Therefore, condition a cold scale for approx. 2 hours at room temperature, leaving it unplugged from AC power. Afterwards, keep the scale continuously connected to AC power.



AC Power Connection/Safety Precautions
Use only

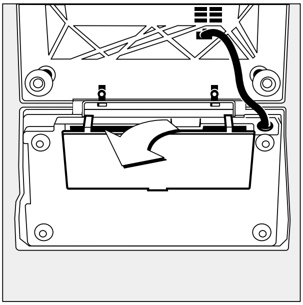
– Original Sartorius AC adapters; for Europe: 6971948

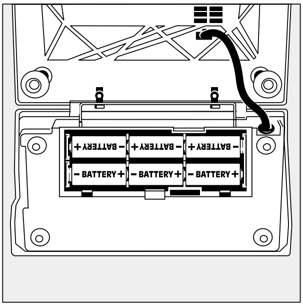
- Insert the right-angle plug into the jack on the scale

- Then plug the Class 2 AC adapter into any electrical outlet. No additional safety precautions are required.

Information on Radio Frequency Interference
Warning!
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference, when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Installing the Batteries





○ Batteries are not included with the equipment supplied.

⚠ Use only commercially available size C alkaline manganese batteries rated to 1.5 V max. 8,100 mAh.

● Lay the scale on its side.

● To open the battery compartment, lift the compartment cover.

● Install six 1.5-volt size C batteries in the compartment.

○ Make sure to connect the positive and negative poles correctly.

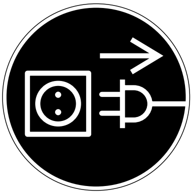
⚠ Used batteries are classified as waste that requires special handling (not “household” waste). Dispose of rechargeable batteries according to your country’s applicable special waste disposal regulations.

● To close the battery compartment: Press down on the cover until it clicks into place.

For automatic shutoff of a battery-operated scale:

○ Select “automatic shutoff” in the menu: Please see the chapter on “Settings” to select code 8. 4. 1

> The scale will then shut off automatically when it has not been operated for more than approx. 2 minutes.

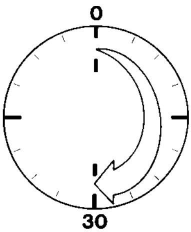


Connecting Electronic Peripheral Devices

● Make absolutely sure to unplug the scale from AC power before you connect or disconnect a peripheral device (printer or PC) to or from the interface port.

For battery operation:

> Press the [ON/OFF] key to shut off the power completely (scale does not go into standby mode).



Warmup Time
To deliver exact results, the scale must warm up for at least 30 minutes after initial connection to AC power. Only after this time will the scale have reached the required operating temperature.

Operating the Scale

Weighing

Features

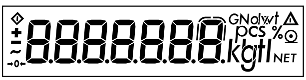
– Zeroing the scale
Depending on the prevailing ambient conditions, the display may not show a zero readout even though there is no load on the scale. If the weight shown is less than 2% of the scale's maximum weighing capacity, you can zero the scale.

– Taring the scale (saving a [container] weight in the memory by subtracting it from the display)
Tare the scale with an empty container on the weighing pan to obtain a readout of the net weight after filling the container.

– Printing weights

Preparation

● Turn on the scale:
Press [ON/OFF]

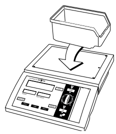
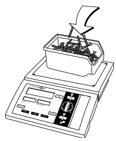


> A self-test is performed

○ To change settings: please see the chapter on "Settings"

○ To load the factory settings: please see the chapter on "Settings," parameter 9. - 1

Example
Determine a weight
Settings: factory settings

Step	Press key	Display/Printout
1. Turn on scale	[ON/OFF]	0.0 g
2. If necessary, zero scale	[ZERO]	0.0 g
3. Place empty container on scale (in this example, 11.5 g)		+ 11.5 g
4. Tare scale	[TARE]	0.0 g
5. Place sample in container on scale (in this example, 120.5 g)		+ 120.5 g
6. Print weight*	[PRINT]	ABC HOBBY SHOP LOS ANGELES N + 120.5 g T + 11.5 g G# + 132.0 g

* Your local Sartorius service center or dealer can configure the scale to include 2 customer-specific lines on the printout.
Software is available for setting this configuration using a PC.

Calibration/Adjustment

Purpose
Technically, calibration means determining the difference between the weight readout and the true weight (mass) of a sample. Calibration does not entail making any changes within the scale. Adjustment is the correction of this difference between the measured value displayed and the true weight (mass) of a sample, or the reduction of the difference to an allowable level within the maximum permissible error limits. Because the CB scale automatically performs both calibration and adjustment, we use the term "calibrate/adjust" to mean both in this manual.

Features
Calibration/adjustment can only be performed when
- there is no load on the scale,
- the scale is set to zero, and
- the internal signal is stable.

If these conditions are not met, an error code is displayed.

The value of the weight on the scale must not differ from the nominal weight by more than 2%.

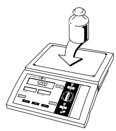
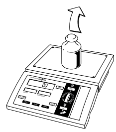
You can use any of the following weight units to calibrate/adjust:
g, kg, lb (1. 4.)

You can block calibration/adjustment of the scale (1. 5.)

Factory Settings of the Parameters
Weight unit for calibration/adjustment:
grams (1. 4. 1)

Calibration/adjustment function:
accessible (1. 5. 1)

Example
Calibrate/adjust the scale
Settings: factory settings

Step	Press key	Display/Printout
1. Turn on scale, if power is off	[ON/OFF]	0.0 g
2. If necessary, zero the scale	[ZERO]	0.0 g
3. Start calibration/adjustment Calibration weight is displayed without wt. unit	[TARE] (> 2 sec)	+ 500.0
4. Place the indicated calibration weight on scale (in this case, 500 g)		500.0
After calibration/adjustment, calibration weight is displayed with wt. unit		+ 500.0 g
5. Remove calibration weight		0.0 g

Counting

Purpose

With the counting program, you can determine the number of parts that have approximately the same average piece weight.

Features

- The minimum capacity is one digit related to the resolution of the particular weight unit selected.

- The resolution can be selected for the average piece weight to be saved as a reference and calculation of the piece count.

- The criterion for saving the average sample weight (“Wref”) and calibration of the piece count can be selected. This criterion applies to the following key functions: [ZERO], [TARE], [START] and [OK].

- Reinitialize without quitting the counting application.

- The average piece weight and reference sample quantity (piece count = “nRef”) are automatically output via the data interface port after initialization, if you have selected the setting for printing several lines of data with nRef/wRef in the menu.

- Press [UNIT] to toggle between the piece count and weight.

⚠ Piece weights that show high variations or are too low will negatively affect the counting accuracy.

Function Keys

[START] key:

- Press [START] to begin determining the average piece weight.
- The current weight is shown as a reference for the average piece weight that is saved when [OK] is pressed.
- Place the reference sample parts on the scale when “PIECE WEIGHT”: SAMPLE is displayed.
- Depending on the menu code previously set, the scale is either automatically tared or not tared when the “Counting” program is started.
- The “Auto Zero” function is de-activated until the average piece weight has been saved.

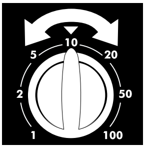
[OK] key:

- Initializes the counting application using the reference sample quantity selected in the menu.
- Shows the average piece weight as “PIECE WEIGHT” after you have pressed the key once.
- If you press the [OK] key again, this will reinitialize the counting application.

If you press the [OK] key >2 sec.:

- The number of the last reference sample quantity “nRef” will be displayed (Init. or Opt.).

Selector



– Turn this selector to set the reference sample quantity.

– Each time you change the selector setting, the new reference sample quantity will be briefly displayed.

Reference Sample Updating
Automatic reference sample updating optimizes the counting accuracy.
You can activate or de-activate this function in the menu.
The abbreviation opt for "optimizing" briefly appears in the "PIECE WEIGHT" display to indicate that reference sample updating has been completed if

– the criterion for the stability parameter selected in the menu has been met

– the current piece count is less than twice the original piece count

– the current piece count is less than 1,000

– the internally calculated piece count (such as 17.24 pcs) differs by less than ± 0.3 pcs from the whole number (17 pcs in this example)

Factory Settings of the Parameters
Program selection:
Counting without weight unit toggling (2. 1. 4)

Resolution:
Standard: according to the displayed accuracy
(3. 4. 1)

Storage parameter:
At stability (3. 5. 1)

Reference sample updating:
Automatic (3. 6. 2)

Autotare when [START] is pressed:
On (3. 7. 2)

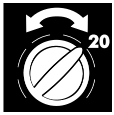
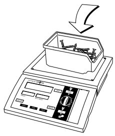
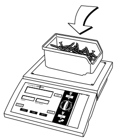
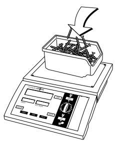
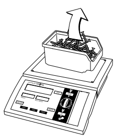
Additional Functions
In addition to the basic functions (power off, zeroing, taring and printing), you can also access the following functions from this application:

– Cancel initialization: [DELETE] key

– Show weight: [UNIT] key

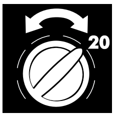
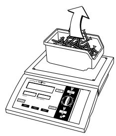
– Calibrate/adjust scale: press [TARE] > 2 sec.

Example 1:
Count parts into a container
Menu settings: factory settings

Step	Press key	Display/Printout
1. Turn on scale, if power is off.	[ON/OFF]	
2. Place empty container on scale and start counting.	[START]	0.0 g + 36.6 SAMPLE
3. Select reference sample quantity; for example, turn selector to "20".		Brief display of: rEF 20
4. Place reference sample quantity on scale (20 parts in this case).		+ 23.1 g
5. Save reference sample quantity. The scale now calculates the average piece weight.	[OK]	+ 20 pcs + 23.1 + 1.1550
6. If necessary, update the reference sample using the optimizing function; in this case, add 2 to 20 additional parts to the weighing pan.		+ 32 pcs + 36.6 oPt.
7. Now place unknown number of parts on pan (in this example, 260).		+ 260 pcs +297.4 + 1.1438
8. Print piece count. If you have selected "nRef" and "wRef" in the menu, these lines will be printed:	[PRINT]	nRef + 32 wRef + 1.1438 g Qnt + 260 pcs G + 297.4 g
9. Unload scale		0 pcs

10. Repeat counting starting from step 7, if desired.

Example 2:
Counting parts into a full container
Settings: (changes in factory settings required for this example)
Autotare when the [START] is key is pressed: Off (Code 3. 7. 1)

Step	Press key	Display/Printout
1. Turn on scale, if power is off.	[ON/OFF]	
2. Place empty container on scale and tare.	[TARE]	0.0 g NET
3. Place full container on scale and initialize counting.	[START]	+ 267.3 g NET +267.3 SAMPLE
4. Set reference sample quantity; in this example, turn selector to "20".		Brief display of: rEF 20
5. Remove selected quantity of reference parts from container.		+ 249.1 g NET +249.1 SAMPLE
6. Save reference piece count. The scale now calculates the number of parts and displays the piece count.	[OK]	+ 274 pcs NET +249.1 +0.9100
7. Print piece count. If you have selected "nRef" and "wRef" in the menu, these lines will be printed:	[PRINT]	nRef + 20 wRef + 0.9100 g Qnt + 274 pcs N + 249.1 g T + 50.0 g G# + 299.1 g
8. Unload scale		0 pcs NET
9. Repeat counting starting from step 6, if desired.		

Toggle between Units

Purpose
With this application program, you can toggle the display of a weight back and forth between two units.

Features
- Mass unit conversion of a displayed weight by toggling
- Other features as for the basic weighing function

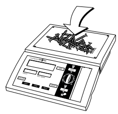
Factory Settings of the Parameters
Toggle between weights:
Counting without toggling weight unit (2. 1. 4)
Weight unit 1: grams (1. 7. 2)
Weight unit 2: pounds (3. 1. 5)

Additional Functions
In addition to the functions for:
- turning off scale power: [ON/OFF] key
- zeroing the scale: [ZERO] key
- taring the scale: [TARE] key
- printing: [PRINT] key

you can also access the following functions from this application:
- toggle between weight units 1 and 2: [UNIT] key
- calibrate/adjust scale: press [TARE] for > 2 sec.

Menu Code		Unit	Conversion Factor	Printout
(1. 7. 1)	(3. 1. 1)	Grams (o)	1.00000000000	o
(1. 7. 2)	(3. 1. 2)	Grams (g)	1.00000000000	g
(1. 7. 3)	(3. 1. 3)	Kilograms	0.00100000000	kg
(1. 7. 4)	(3. 1. 4)	Carats	5.00000000000	ct
(1. 7. 5)	(3. 1. 5)	Pounds	0.00220462260	lb
(1. 7. 6)	(3. 1. 6)	Ounces	0.03527396200	oz
(1. 7. 7)	(3. 1. 7)	Troy ounce	0.03215074700	ozt
(1. 7. 8)	(3. 1. 8)	Hong Kong taels	0.02671725000	tlh
(1. 7. 9)	(3. 1. 9)	Singapore taels	0.02645544638	tls
(1. 7. 10)	(3. 1. 10)	Taiwanese taels	0.02666666000	tlt
(1. 7. 11)	(3. 1. 11)	Grains	15.43235835000	GN
(1. 7. 12)	(3. 1. 12)	Pennyweights	0.64301493100	dwt
(1. 7. 14)	(3. 1. 14)	Parts per pound	1.12876677120	/lb
(1. 7. 15)	(3. 1 15)	Chinese taels	0.02645547175	tlc
(1. 7. 16)	(3. 1. 16)	Mommes	0.26670000000	mom
(1. 7. 17)	(3. 1. 17)	Austrian carats	5.00000000000	K
(1. 7. 18)	(3. 1. 18)	Tola	0.08573333810	tol
(1. 7. 19)	(3. 1. 19)	Baht	0.06578947437	bat
(1. 7.20)	(3. 1.20)	Mesghal	0.21700000000	MS

Example
Toggle unit from grams [g] (1st unit) to pounds [lb] (2nd unit)
Settings (changes in the factory settings required for this example):
Menu: Counting with toggling weight unit (2. 1. 15)

Step	Press key	Display/Printout
1. Turn on scale, if power is off	[ON/OFF]	0.0 g
2. Load scale (in this example, with 314.3 g)		+ 314.3 g
3. Toggle to pounds [lb] unit	[UNIT]	+ 0.6930 lb
4. Print weight	[PRINT]	ABC HOBBY SHOP LOS ANGELES G + 0.6930 lb
5. Toggle to grams [g] unit	[UNIT]	+ 314.3 g

Weigh Averaging

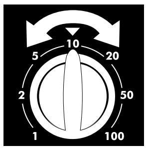
Purpose
Use this application program to determine weights of moving samples (such as animals) or weights under unstable ambient conditions. In this application, the scale calculates the average from a defined number of individual weight measurements called "subweighing operations."

Features
- The measured result displayed is the arithmetic mean shown in the preselected weight unit; a triangle indicates that this is a calculated value.
- You can adjust the selector to the number of subweighing operations before starting weigh averaging using the [OK] key.
- The number of subweighing operations remaining to be performed is displayed during a measurement.
- To display the number of subweighing operations for averaging, press the [OK] key for more than 2 sec.
- Press the [UNIT] key to toggle between the calculated result and the weight readout.
- The results are automatically output via the interface port if you have selected the printout option with data ID codes in the menu.

Function Keys
[OK] key:
- Saves the number of subweighing operations you selected for averaging and starting weigh averaging.
- If you press the [OK] key again, averaging will be reinitialized.

[DELETE] key:
- Cancels initialization.

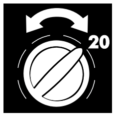
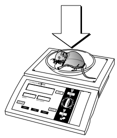
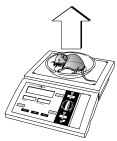
Selector



- Turn this selector to set the number of subweighing operations.
- Each time you change the selector setting, the new number of subweighing operations will be briefly displayed.

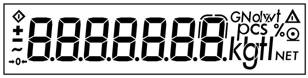
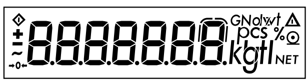
Preparation
● Select the "weigh averaging" program in the menu: see chapter on "Settings" to select code 2. 1. 12

Example
Determine the weight of a sample under extremely unstable ambient conditions by calculating the average of 20 subweighing operations.
Settings (changes in the factory settings required for this example):
Menu: “Weigh averaging” application program, code 2. 1. 12

Step	Press key	Display/Printout
1. Turn on scale, if power is off.	[ON/OFF]	
2. Tare scale	[TARE]	0.0 g
3. Select number of subweighing operations (20 measurements in this example)		rEF 20 (briefly)
4. Place sample on scale (weight readout fluctuates; here, for example, by about 275 g)		+ 8888
5. Start measurement	[OK]	+ 8888 20 19 ... 1
After 20 subweighing operations		+ 275.5 g ⚠
If the print format is set to include data ID codes, the following is printed:		RES + 275.5 g
6. Unload scale		+ 275.5 g ⚠ (stable display)
7. Delete result	[DELETE]	
8. Repeat procedure starting from step 4, if desired.		

Settings

Setting the Parameters (Menu)
This means you configure, or adapt, the scale to your user requirements by selecting the parameter settings from a menu.
Example: Adapt scale to place of installation with “Extreme vibration”
Select (Code 1. 1. 4)

Step	Press key	Display
1. Turn off scale	[ON/OFF]	
2. Turn scale back on and,	[ON/OFF]	
while all segments are displayed, press	[TARE] briefly	1.
○ To navigate within a menu level; the last menu option is followed by the the first option	Press [TARE] repeatedly	2. ... 9. 1.
3. Select the 2nd menu level	[PRINT]	1. 1.
4. Select the 3rd menu level	[PRINT]	1. 1. 2 o
5. In menu level 3: Select the desired option repeatedly	Press [TARE] repeatedly	1. 1. 4
6. Confirm new setting; ”o” indicates the currently set option	Press [PRINT] for 2 sec.	1. 1. 4 o
○ Return to next higher menu level (from the 3rd menu level)	[PRINT]	1.
○ Set other menu codes, if desired	[PRINT], [TARE]	
7. Save parameter settings and exit menu or	Press [TARE] for 2 sec.	
○ Exit menu without saving changes	[ON/OFF]	
> Restart the application		0.0 g

Parameter Settings (Overview)

o Factory setting
√ User setting

	1st Menu Level	2nd Menu Level	3rd Menu Level	Factory Setting	Menu Item
Menu	1. Weighing	1.1. Adapt filter	1.1.1		Minimum vibration
			1.1.2	o	Normal vibration
			1.1.3		Strong vibration
			1.1.4		Extreme vibration
		1.3. Stability range	1.3.1		1/4 digit
			1.3.2		1/2 digit
			1.3.3	o	1 digit
			1.3.4		2 digits
			1.3.5		4 digits
		1.4. Unit for calibration weight	1.4.1	o	Grams
			1.4.2		Kilograms
			1.4.3		Pounds
		1.5. Calibration/ adjustment	1.5.1	o	Accessible
			1.5.2		Blocked
		1.6. Auto zero	1.6.1	o	On
			1.6.2		Off
		1.7. Weight unit 1 (basic unit)	1.7.1		Grams (o)
			1.7.2	o	Grams (g)
			1.7.3		Kilograms
			1.7.4		Carats
			1.7.5		Pounds
			1.7.6		Ounces
			1.7.7		Troy ounces
			1.7.8		Hong Kong taels
			1.7.9		Singapore taels
			1.7.10		Taiwanese taels
			1.7.11		Grains
			1.7.12		Pennyweights
			1.7.14		Parts per pound
			1.7.15		Chinese taels
			1.7.16		Mommes
			1.7.17		Austrian carats
			1.7.18		Tola
			1.7.19		Baht
			1.7.20		Mesghal
		1.8. See next page			
	2. through 9.	See following pages			

1st Menu Level	2nd Menu Level	3rd Menu Level	Factory Setting	Menu Item
Menu – 1. Weighing	1.1. through 1.7.	See previous page		
	1.8. Display resolution 1	1.8.1	o	Standard
		1.8.2		10× higher resolution
		1.8.3		2× higher resolution (SuperRange)
2. Application programs	2.1. Program selection	2.1.4	o	Counting without toggling weight unit
		2.1.12		Weigh averaging
		2.1.15		Counting with toggling weight unit
3. Application parameters	3.1. Weight unit 2	3.1.1		Grams (o)
		3.1.2		Grams (g)
		3.1.3		Kilograms
		3.1.4		Carats
		3.1.5	o	Pounds
		3.1.6		Ounces
		3.1.7		Troy ounces
		3.1.8		Hong Kong taels
		3.1.9		Singapore taels
		3.1.10		Taiwanese taels
		3.1.11		Grains
		3.1.12		Pennyweights
		3.1.14		Parts per pound
		3.1.15		Chinese taels
		3.1.16		Mommes
		3.1.17		Austrian carats
		3.1.18		Tola
		3.1.19		Baht
		3.1.20		Mesghal
	3.2. Display resolution 2	3.2.1	o	Standard
		3.2.2		10× higher resolution
		3.2.3		2× higher resolution (SuperRange)
	3.4. Counting resolution	3.4.1	o	Standard: display accuracy, 1 to 1
		3.4.2		10× higher than standard
		3.4.3		100× higher than standard
	3.6. through 3.7.	See next page		
5. through 9.	See following pages			

	1st Menu Level	2nd Menu Level	3rd Menu Level	Factory Setting	Menu Item
Menu	1. through 2.	See previous page			
	3. Application parameters	3.5. Storage parameter	3.5.1	o	With stability
			3.5.2		With higher stability
		3.6. Reference sample updating	3.6.1		Off
			3.6.2	o	Automatic
		3.7. Autotare when [START] key is pressed	3.7.1		Off
			3.7.2	o	On
	5. Interface	5.1. Baud rate	5.1.1		150 baud
			5.1.2		300 baud
			5.1.3		600 baud
			5.1.4	o	1,200 baud
			5.1.5		2,400 baud
			5.1.6		4,800 baud
			5.1.7		9,600 baud
		5.2. Parity	5.2.1		Mark
			5.2.2		Space
			5.2.3	o	Odd
			5.2.4		Even
		5.3. Number of stop bits	5.3.1	o	1 stop bit
			5.3.2		2 stop bits
		5.4. Handshake mode	5.4.1		Software handshake
			5.4.2	o	Hardware handshake, 1 character after CTS
			5.4.3		Hardware handshake, 2 characters after CTS
		5.5. Communications mode	5.5.1	o	PC, YDP03 printer (SBI)
			5.5.2		YDP04IS-0CE* printer
	6. Printing	6.1. Manual/auto print mode	6.1.1		Manual without stability
			6.1.2	o	Manual after stability
			6.1.3		Automatic without stability
			6.1.4		Automatic at stability
	8. through 9.	See next page			

* = To operate the YDP04IS-0CE, also configure the following menu codes:
- 5.1.7 “9,600 baud”
- 5.2.2 ”space parity”
- 5.3.2 “2 stop bits”
- 5.4.2 “hardware handshake, 2 characters after CTS”

	1st Menu Level	2nd Menu Level	3rd Menu Level	Factory Setting	Menu Item
Menu	1. through 7.	See previous page			
	7. Printing	7.1. Line format of printout	7.1.1		Without data ID codes
			7.1.2		With data ID codes
			7.1.3		With data ID codes, N, T, G, Qnt values and 2 header lines
			7.1.4	o	With data ID codes, N, T, G, Qnt values, nRef/WRef and 2 header lines
	8. Extra functions	8.1. Menu	8.1.1	o	Parameter settings alterable
			8.1.2		Parameter settings read only
		8.2. External switch function	8.2.1		[ZERO] key
			8.2.2		[TARE] key
			8.2.3	o	[PRINT] key
			8.2.4		[DELETE] key
			8.2.5		[UNIT] key
			8.2.6		[START] key
			8.2.7		[OK] key
		8.3. Power-on mode for scale	8.3.1		Off/on (generally used for battery operation)
			8.3.2	o	Standby/on
		8.4. Auto shutoff mode for scale	8.4.1		Scale not operated for more than 2 minutes
			8.4.2	o	No auto shutoff
	9. Reset menu	9.– Factory settings	9.– 1		Reset
			9.– 2		Do not reset

Generating a Printout

Purpose
You can generate a printout of weights as well as other measured values and identification codes for documentation purposes. You can format the printout to meet individual requirements.

Features
You can print two customized header lines of 14 characters each. (These text lines are entered either at the Sartorius factory or on-site with a special program that uses the BPI interface command sequence).

Also, you can choose to print an individual weight or net, gross and tare weights.

Line format: You can configure a data ID code of up to 6 characters each for the values to be printed; this data ID code is printed at the beginning of a line.

You can generate printouts either automatically or by pressing the [PRINT] key; the printout can be dependent or independent of the scale's stability parameter.

You can have the following values output automatically if menu code 7. 1. 4 (printout with data ID codes) is selected:
– Average piece weight (wRef)
– Reference sample quantity (nRef)

Factory Settings of the Parameters
Header lines:
The header lines do not contain any information in the standard factory setting.

Manual/automatic print mode:
In the manual mode, an individual value is printed when you press the print key; in the automatic mode, values are printed depending on the stability parameter selected for the scale:
Manual after stability (6. 1. 2).

Line format:
You can configure a data ID code of up to 6 characters for each of the values to be printed: printout of the net, tare and gross values; reference sample quantity, average piece weight with data ID codes (7. 1. 4).

● To set the parameters, please see the chapter on “Settings”

Description	Examples	
Header Lines: You can configure the printout to include 2 user-defined header lines. The software required for configuring these lines is available from Sartorius in Goettingen or your local Sartorius office or dealer.	ABC HOBBY SHOP	User-defined
	LOS ANGELES	User-defined
Printout without Data ID Codes: The value currently displayed is printed (weight or calculated value with unit)	+ 1530.0 g	Weight in grams
	+ 58.562 ozt	Weight in Troy ounces
	+ 253 pcs	Piece count
Printout with Data ID Codes: The value currently displayed can be printed with a data ID code of up to 6 characters at the beginning of each line. You can use this data ID code to identify a weight as a net value (N) or as a calculated piece count (Qnt).	N + 153.0 g	Current net weight
	T + 023.4 g	Value saved in tare memory
	G + 155.3 g	Current gross weight
	G# + 163.0 g	Calculated gross weight
	Qnt + 253 pcs	Calculated piece count
Print Application Parameters (for Counting): You can print the values configured for initialization of an application	wRef + 0.1400 g	Average piece weight
	nRef + 10	Reference sample quantity
Auto Print: You can have the weight readout printed automatically. The display update interval depends on the operating status of the scale and on the scale model.	N + 153.0 g	Net weight
	Stat	Display blank
	Stat L	Display underload
	Stat H	Display overload

Data Interface

Purpose
Your CB scale comes equipped with an interface port for connection to a computer or other peripheral device.

You can use an on-line computer to change, start and/or monitor the functions of the scale and the application program (such as counting).

Features

Type of interface:	serial interface port
Operating mode:	full duplex
Standard:	RS-232
Transmission rates:	150; 300; 600; 1,200; 2,400; 4,800; 9,600 baud
Parity:	mark, space, odd, even
Character format:	1 start bit, 7-bit ASCII, parity, 1 or 2 stop bits
Handshake:	2-wire interface: via software (XON/XOFF) 4-wire interface: via hardware (CTS/DTR)
Communications mode:	SBI
Data output format:	16 or 22 characters

Factory Settings of the Parameters

Transmission rate:	1,200 baud (5. 1. 4)
Parity:	Odd (5. 2. 3)
Stop bits:	1 stop bit (5. 3. 1)
Handshake:	Hardware handshake, 2 characters after CTS (5. 4. 2)
Communications mode:	Standard SBI (5. 5. 1)
Manual/automatic print mode:	Manual after stability (6. 1. 2)

Preparation

- See sections on "Pin Assignment" and "Cabling Diagram"

Data Output Format

You can output the values displayed including the weight unit, either with or without data ID codes.

Example: without data ID code

```
+      253 pcs
```

Example: with data ID code

```
Qnt   +      253 pcs
```

Select the type of output in the menu (menu: print formats 7. 1. 1, 7. 1. 2, 7. 1. 3 or 7. 1. 4). The output without a data ID code has 16 characters; with the data ID code, 22 characterS.

Data Output Format with 16 Characters
Display segments that are not activated are output as spaces. Characters without a decimal point are output without a decimal point.

The following characters can be output, depending on the characters displayed:

Normal Operation

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	+				D	D	D	D	D	D	*	U	U	U	CR	LF
or	–		.	.	.	.	.	.	.	.		*	*	*		
or	*		*	*	*	*	*	*	*	*						
or					0	0	0	0	0	0						

*: Space
D: Character displayed (digit or letter)
U: Unit symbol
CR: Carriage return
LF: Line feed

Special Codes

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					*	*	–	–	*	*	*	*	*	*	CR	LF
or							H	*								
or							L	*								
or							C	*								

*: Space
– –: Unstable weight (final readout mode: only the stable weight is shown in digits)
H: Overload
L: Underload
C: Calibration/Adjustment

Error Codes

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				*	*	U	*	#	#	#	*	*	*	*	CR	LF

*: Space
#: Error code number

Example: Output weight + 1255.7 g

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	+	*	*	*	1	2	5	5	.	7	*	g	*	*	CR	LF

Position 1: Plus or minus sign or space
Position 2: Space
Positions 3–10: Weight with a decimal point; leading zeros are output as spaces
Position 11: Space
Positions 12–14: Unit symbol or space
Position 15: Carriage return
Position 16: Line feed

Data Output Format with 22 Characters

When data with an ID code is output, the ID code consisting of 6 characters precedes the data with the 16-character format. These 6 characters identify the following value:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
I	I	I	I	I	I	+	*	D	D	D	D	D	D	D	D	*	U	U	U	CR	LF
	*	*	*	*	*	_		.	.	.	.	.	.	.	.		*	*	*		
						*		*	*	*	*	*	*	*	*						
										0	0	0	0	0	0						

I: ID code character[1)]
*: Space
D: Character displayed

U: Unit symbol
CR: Carriage return
LF: Line feed

1) depends on scale type

Special codes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	t	a	t	*	*	*	*	*	*	*	*	–	–	*	*	*	*	*	*	CR	LF
												H	*								
												L	*								

*: Space
– –: Unstable weight
(stable weight indicated in digits in final readout mode)

H: Overload
L: Underload

Error Codes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	t	a	t	*	*	*	*	*	*	*	E	*	#	#	#	*	*	*	*	CR	LF

*: Space

#: Error code number

ID code characters 1	Meaning
Stat	Status
G	Gross weight: G/B
G#	Calculated gross weight: G/B
T	Tare T
N	Net N
Qnt	Counting: piece count
wRef	Counting: average piece weight
nRef	Counting: reference sample quantity

Data Input Format
You can connect a computer to your scale to send commands via the scale interface port to control the functions of the scale and applications (such as counting).

The commands sent are control commands and may have different formats. Control commands can consist of up to 4 characters. Each of these characters must be sent according to the settings configured in the menu for data transmission.

Format for Control Commands

Format : Esc	!	CR	LF

Esc: Escape
!: Command character
CR: Carriage return (optional)
LF: Line feed (optional)

Command character !	Meaning
K	Weighing mode 1
L	Weighing mode 2
M	Weighing mode 3
N	Weighing mode 4
O	Block keys
P	Print
R	Release keys
S	Restart
T	Tare and zero (combined)
U	Tare (“Tare only”)
V	Zero
W	External calibration/adjustment

Synchronization
During data communication between the scale and an on-line device (computer), messages consisting of ASCII characters are transmitted via the interface. For error-free data communication, the parameters for baud rate, parity, handshake mode and character format must be the same for both units.

You can set these parameters in the menu so that they match those of the on-line device. You can also define parameters in the scale to make data output dependent on various conditions. The conditions that can be configured are described under each of the application program descriptions.

If you do not plug a peripheral device into the scale interface port, this will not generate an error message.

Handshake
The scale interface (Sartorius Balance Interface = SBI) has transmit and receive buffers. You can define the handshake parameter in the menu:
- Hardware handshake (CTS/DTR)
- Software handshake (XON, XOFF)

Hardware Handshake
With a 4-wire interface, 1 more character can be transmitted after CTS (Clear to Send).

Software Handshake
The software handshake is controlled via XON and XOFF. When a device is switched on, XON must be transmitted to enable any connected device to communicate.

Activating Data Output
You can define the data output parameter so that output is activated either when a print command is received or automatically and synchronous with the scale display or at defined intervals (see application program descriptions [“Counting”] and automatic print setting).

Data Output by Print Command
The print command can be transmitted by pressing [PRINT] or by a software command (Esc P).

Automatic Data Output
In the “automatic print” mode, data is output to the interface port without a print command. You can choose to have data output automatically at defined print intervals with or without the stability parameter. Whichever parameter you select, the data will be output as the readouts appear on the scale display. The display update frequency depends on the menu setting for “Adapt filter” 1.1.x.

If you select the automatic print setting, data will be transmitted immediately the moment you turn on the scale.

Pin Assignment Chart

Female Interface Connector:
25-position D-Submini, DB25S, with screw lock hardware for cable gland

Male Connector Required (recommended):
25-pin D-Submini, DB25S, with integrated shielded cable clamp assembly
(Amp type 826 985-1C) and fastening screws (Amp type 164 868-1)

⚠ **Warning When Using Prewired RS-232 Connecting Cables:**
RS-232 cables purchased from other manufacturers often have incorrect pin assignments for use with Sartorius scales. Be sure to check the pin assignment against the chart below before connecting the cable, and disconnect any lines marked "Internally Connected" (e.g., pin 6). Failure to do so may damage or even completely ruin your scale and/or peripheral device.

Pin Assignment Chart:

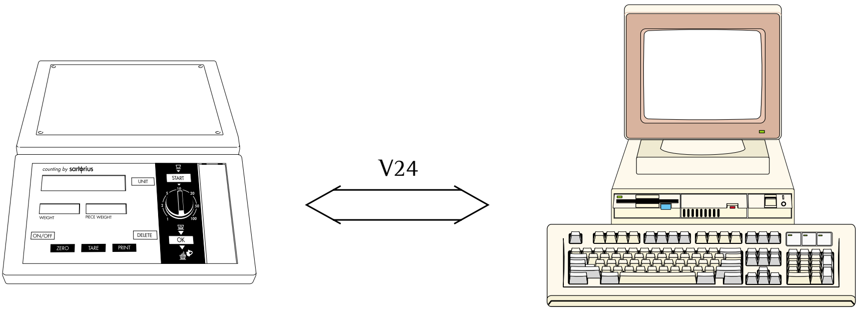
Pin 1:	Signal Ground
Pin 2:	Data Output (TxD)
Pin 3:	Data Input (RxD)
Pin 4:	Internal Ground (GND)
Pin 5:	Clear to Send (CTS)
Pin 6:	Internally Connected
Pin 7:	Internal Ground (GND)
Pin 8:	Internal Ground (GND)
Pin 9:	Internally Connected
Pin 10:	Not Connected
Pin 11:	Ext. Power Supply Only for Sartorius Accessories
Pin 12:	Reset-Out for Sartorius Accessories*)
Pin 13:	+5 V Output
Pin 14:	Internal Ground (GND)
Pin 15:	Universal Remote Switch
Pin 16:	Not Connected
Pin 17:	Not Connected
Pin 18:	Not Connected
Pin 19:	Not Connected
Pin 20:	Data Terminal Ready (DTR)
Pin 21:	Internal Ground (GND)
Pin 22:	Internally Connected
Pin 23:	Internally Connected
Pin 24:	Not Connected
Pin 25:	+5 V Output

Connector for Remote Switch (between Pin 8 and Pin 15)

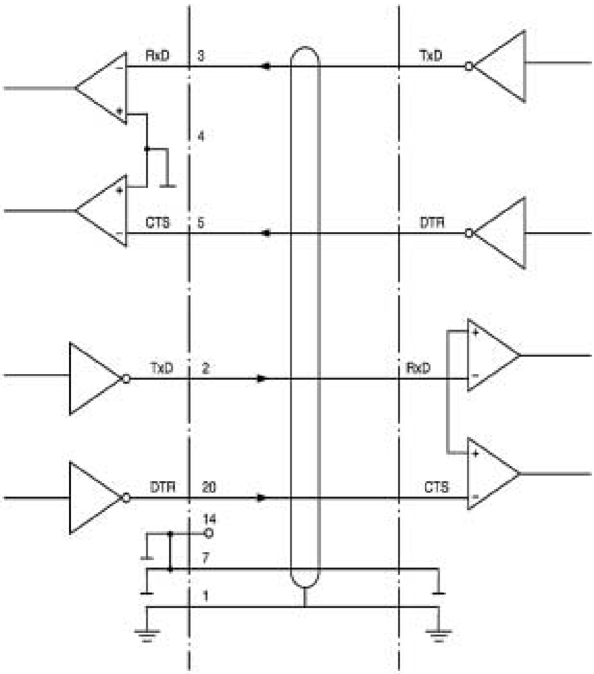
*) = Hardware restart

Cabling Diagram

– Diagram for interfacing a computer or different peripheral device to the scale using the RS-232C/V24 standard and cables up to 15 m (50 ft.) long



Scale **Peripheral**



	PC	
25-pin	**or**	**9-pin**
2		3
20		4
3		2
5		8
7		5

Type of cable: AWG 24 specification

Error Codes

Error codes are shown on the main display for approx. 2 seconds, after which the program automatically returns to the weighing mode.

Display	Cause	Solution
No segments appear on the display	No AC power is available	Check the AC power supply
	The AC adapter is not plugged in	Plug the AC adapter into an electrical outlet
	Automatic shutoff is configured	Turn on the scale
	Non-rechargeable/ rechargeable batteries are drained	Replace or recharge batteries using external charger
H	The load exceeds the scale capacity	Unload the weighing pan
L	Something is touching the weighing pan	Move the object that is touching the weighing pan away
E 01	Data output is not compatible with the input format	Change the setting to the compatible one in the menu
E 02	Calibration/adjustment condition not met, e.g.: – scale not zeroed – scale is loaded	Calibrate/adjust only when zero is displayed Press [ZERO] to zero scale display Unload scale
E 08	The scale was zeroed outside the zero range	Only zero the scale when in the allowable zero range of ± 2% of the maximum capacity
E 09	Taring not possible when the gross value ≤ zero	Press [ZERO] to zero the scale

Display	Cause	Solution
E 22	The weight is too light or there is no sample on the weighing pan	Increase the reference sample quantity
E 30	The interface port for printer output is blocked	Set code to reset menu or contact your local Sartorius Service Center
The weight readout changes constantly	Unstable ambient conditions (too much vibration or the scale) is exposed to a draft)	Set up the scale in a different area or change the menu setting to adapt the scale
	A foreign object is caught between the weighing pan and the scale frame	Remove the foreign object
The weight readout is obviously wrong	The scale was not calibrated/adjusted; the scale was not zeroed before weighing	Calibrate/adjust the scale; zero before weighing

If any other errors occur, please contact your local Sartorius service center: for a list of the addresses, please visit our Internet website at: http://www.sartorius.com

Care and Maintenance

Service
Regular servicing by a Sartorius technician will extend the service life of your scale and ensure its continued weighing accuracy. Sartorius can offer you service contracts, with your choice of regular maintenance intervals ranging from 1 month to 2 years.

The frequency of maintenance intervals depends on the operating conditions and your tolerance requirements.

Repairs
Repair work must be performed by trained service technicians. Any attempt by untrained persons to perform repairs may lead to considerable hazards for the user.

Cleaning
⚠ Disconnect the scale from the AC adapter and unplug any interface cables that are connected to the scale.
⚠ Make sure that no liquids enter the scale housing.
⚠ Do not use any aggressive cleaning agents (solvents or similar agents).
● Unplug the AC adapter from the wall outlet (mains supply).
● If you have a data cable connected to the interface, unplug it from the scale.
● Clean the scale using a piece of cloth that has been wet with a mild detergent (soap).
● After cleaning, wipe down the scale with a soft, dry cloth.

Cleaning Stainless Steel Surfaces
Clean all stainless steel parts regularly. Remove the stainless steel weighing pan and thoroughly cleaning it separately outside the hazardous area/location. Use a damp cloth or sponge to clean any stainless steel parts on the scale. You can use any commercially available household cleaning agent that is suitable for use on stainless steel. Clean stainless steel surfaces by wiping them down. Then clean the weighing pan thoroughly, making sure to remove all residues. Use a damp cloth or sponge to wipe down any stainless steel parts on the scale again. Afterwards, allow the scale to dry. If desired, you can apply oil to the cleaned surfaces as additional protection.

⚠ Do not use stainless steel cleaning agents that contain soda lye (caustic), acetic acid, hydrochloric acid, sulfuric acid or citric acid. The use of scrubbing sponges made with steel wool is not permitted.
Solvents are permitted for use only on stainless steel parts.

Safety Inspection
If there is any indication that safe operation of the scale with the AC adapter is no longer warranted:

● Turn off the power and disconnect the power cord from an electrical outlet (mains supply) immediately
> Lock the scale and AC adapter in a secure place to ensure that the equipment cannot be used during this time

Safe operation of the scale with the AC adapter is no longer ensured when:

– there is visible damage to the AC adapter or power cord
– the AC adapter no longer functions properly
– the AC adapter has been stored for a relatively long period under unfavorable conditions

In any of these cases, notify your nearest Sartorius service center or the International Technical Support Unit based in Goettingen, Germany. Maintenance and repair work may only be performed by service technicians who are authorized by Sartorius and who

– have access to the required maintenance manuals
– have attended the relevant service training courses

Recycling

To ensure safe shipment, your scale has been packaged to the extent necessary using environmentally friendly materials. After successful installation of the scale, you should return this packaging for recycling because it is a valuable source of secondary raw material.

For information on recycling old weighing equipment, contact your communal or municipal waste disposal center or local recycling depot.

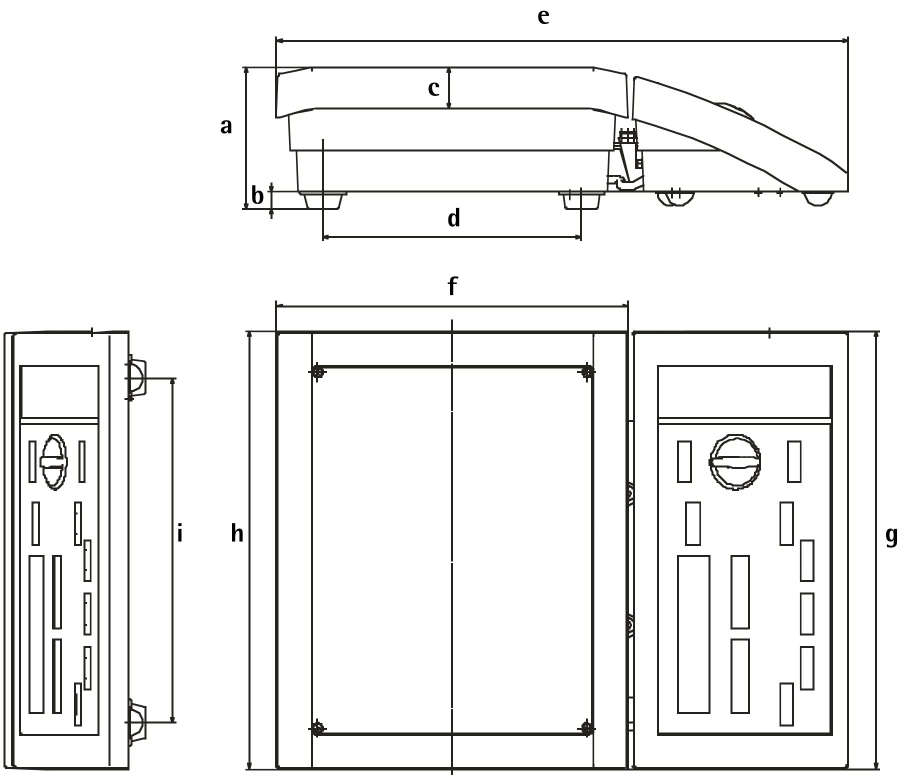
Overview

Specifications

Model		CB06 CCX-N	CB1 CCX-N	CB3 CCX-N	CB6 CCX-N
Weighing capacity	kg	0.6	1.2	3	6
Readability	g	0.1	0.2	0.5	1
Counting resolution	g	0.01	0.02	0.05	0.1
Tare range (subtractive)	kg	0.6	1.2	3	6
Repeatability	≤±g	0.2	0.4	1.0	2.0
Linearity	≤±g	0.3	0.6	1.5	3.0
Operating temperature range		0 ... +40°C (32°F ... 104°F)			
Sensitivity drift within -10 ... +40°C	ppm/K	50			
Stabilization time (average)	s	1.5			
Adaptation to ambient conditions		By selection of 1 of 4 optimized filter levels			
Display update rate (depends on the filter level selected)		0.1 – 0.4			
External calibration weight (of at least accuracy class...)	kg lb	0.5 (M1) 1 (M1)	1 (M1) 2 (M1)	2 (M1) 4 (M1)	5 (M1) 10 (M1)
Net weight, approx.	kg/lb	2.0/4.4			
AC power source/power requirements		via AC adapter 230 V or 115 V, +15% ... – 20%			
Frequency		48 – 60 Hz			
Power source, constant voltage	V	10 to 20			
Power consumption (average)	W	0.75			
Hours of operation with 6 size C cells: – Alkaline manganese batteries, approx.: – Zinc carbon batteries, approx.: – Nickel metal hydride rechargeable batteries; fully charged, approx.: – Nickel cadmium rechargeable batteries; fully charged, approx.:	 h h h h	 114 41 30 22			
Selectable weight units		Grams, kilograms, carats, pounds, ounces, Troy ounces, Hong Kong taels, Singapore taels, Taiwanese taels, grains, pennyweights, parts per pound, Chinese taels, mommes, Austrian carats, tola, baht, mesghal			
Built-in interface Format: Parity: Transmission rates: Handshake:		RS-232C 7-bit ASCII, 1 start bit, 1 or 2 stop bits Mark, odd, even or space 150 to 9,600 baud Software or hardware			

Model		CB16 EDX-N	CB34 EDX-N	CB64 EDX-N
Weighing capacity	kg	16	34	64
Readability	g	2	5	10
Counting resolution	g	0.2	0.5	1
Tare range (subtractive)	kg	16	34	64
Repeatability	≤±g	4	10	20
Linearity	≤±g	6	15	30
Operating temperature range		0 ... +40°C (32°F ... 104°F)		
Sensitivity drift within -10 ... +40°C	ppm/K	50		
Stabilization time (average)	s	1.5		
Adaptation to ambient conditions		By selection of 1 of 4 optimized filter levels		
Display update rate (depends on the filter level selected)		0.1 – 0.4		
External calibration weight (of at least accuracy class...)	kg lb	10 (M1) 20 (M1)	10 (M2) 20 (M2)	20 (M2) 40 (M2)
Net weight, approx.	kg	6.0		
AC power source/power requirements		Via AC adapter 230 V or 115 V, +15% ... -20%		
Frequency		48 – 60 Hz		
Power source, constant voltage	V	10 to 20		
Power consumption (average)	W	0.75		
Hours of operation with 6 size C cells:				
– Alkaline manganese batteries, approx.:	h	114		
– Zinc carbon batteries, approx.:	h	41		
– Nickel metal hydride rechargeable batteries; fully charged, approx.:	h	30		
– Nickel cadmium rechargeable batteries; fully charged, approx.:	h	22		
Selectable weight units		Grams, kilograms, carats, pounds, ounces, Troy ounces, Hong Kong taels, Singapore taels, Taiwanese taels, grains, pennyweights, parts per pound, Chinese taels, mommes, Austrian carats, tola, baht, mesghal		
Built-in interface		RS-232C		
Format:		7-bit ASCII, 1 start bit, 1 or 2 stop bits		
Parity:		Mark, odd, even or space		
Transmission rates:		150 to 9,600 baud		
Handshake:		Software or hardware		

Dimensions (Scale Drawings)



Dimensions in millimeters

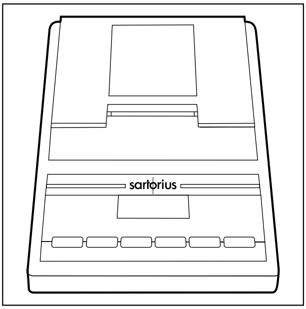
Model	a	b	c	d	e	f	g	h	i
CB .. CCX-N	82	10	24	149	329	202	252	252	199
CB .. EDX-N	121	12	24	238	429	302	252	402	338

Dimensions in inches

Model	a	b	c	d	e	f	g	h	i
CB .. CCX-N	3.2	0.4	0.9	5.9	13	8	9.9	9.9	7.8
CB .. EDX-N	4.8	0.5	0.9	9.4	16.9	11.9	9.9	15.8	13.3

Accessories (Options)

Product	Order No.
Data printer	**YDP04**
Data printer	**YDP03-0CE**



for generating printouts with date/time, statistical evaluation and transaction counter functions; LCD (can only be operated with an AC adapter)

Operating the scale with the YDP03-0CE printer:
- In the printer menu, select "None" for "GLP/GMP printout": -A 1- 0 = None

AC adapter for the data printer with the following standards:

Australia	**6971411**
Europe	**6971412**
Great Britain	**6971414**
South Africa	**6971410**
USA	**6971413**
Paper rolls (5 per box)	**6906937**



Data printer
Strip and label printer with thermal print head; paper width 56 mm max.; external power supply included

– **220 volts**	**YDP04IS-0CEV220**
– **120 volts**	**YDP04IS-0CEV120**

Please request special interface cable!

For operating the YDP04IS-0CE, additionally set the following codes in the scale menu:
- Code 5.5.2 "communications mode YDP04IS-0CE"
- Code 5.1.7 "9600 baud"
- Code 5.2.2 "space for parity"
- Code 5.3.2 "2 stop bits"
- Code 5.4.2 "hardware handshake, 2 characters after CTS"

SartoConnect data transfer software for linking a Sartorius scale to a PC with Windows 95/98 or NT operating software This software enables you to have data recorded by your scale loaded directly into any application program you are running on your PC (e.g., Excel).	**YSC01L**
Interface cable for connecting a PC (25-pin)	**7357312**
Adapter cable from 25-pin D-Sub male connector to 9-contact D-Sub female connector, length 0.25 m	**6965619**
Universal remote control switch Choice of the following key functions [PRINT], [ZERO], [TARE], [UNIT], [DELETE], [START], [OK]:	
Foot switch with T-connector (can only be connected via the YTC01 T-connector)	**YFS01**
Hand switch with T-connector (can only be connected via the YTC01 T-connector)	**YHS02**
T-connector	**YTC01**
Calibration weights For all CB scales; extensive assortment, optionally available with officially recognized DKD certificate (DKD = German Calibration Service)	**Information on request**

CE Marking

The equipment complies with the following EC Directives and European Standards:

Council Directive 89/336/EEC "Electromagnetic compatibility (EMC)"
Applicable European Standards:

1. Electromagnetic Compatibility
1.1. Reference to 89/336/EEC: Office Journal of the European Communities, No. 2001/C 105/03

EN 61326-1 Electrical equipment for measurement, control and laboratory use EMC requirements
Part 1: General requirements Defined immunity to interference: Industrial areas, continuous nonmonitored operation Limitation of emmissions: Residential areas, Class B

Important Note:
The operator shall be responsible for any modifications to Sartorius equipment and must check and, if necessary, correct these modifications. On request, Sartorius will provide information on the minimum operating specifications (in accordance with the Standards listed above for defined immunity to interference).

73/23/EEC "Electrical equipment designed for use within certain voltage limits"
Applicable European Standards:

EN 60950
Safety of information technology equipment including electrical business equipment

EN 61010
Safety requirements for electrical equipment for measurement, control and laboratory use
Part 1: General requirements

If you use electrical equipment in installations and under ambient conditions requiring higher safety standards, you must comply with the provisions as specified in the applicable regulations for installation in your country.

- Place empty container on scale
- Start counting
- Select reference sample quantity
- Place reference sample quantity on scale
- Save reference sample quantity
- Fill container

- Select reference sample quantity
- Place reference sample quantity on scale
- Save reference sample quantity
- Fill container

- Place full container on scale
- Start counting
- Select reference sample quantity
- Remove reference sample quantity
- Save reference sample quantity
- Remove items from the container

▶ Leeren Behälter aufstellen

▶ Zählen starten

▶ Referenzstückzahl einstellen

▶ Eingestellte Stückzahl auflegen

▶ Stückzahl übernehmen

▶ Behälter auffüllen

▶ Referenzstückzahl einstellen

▶ Eingestellte Stückzahl auflegen

▶ Stückzahl übernehmen

▶ Behälter auffüllen

▶ Vollen Behälter aufstellen

▶ Zählen starten

▶ Referenzstückzahl einstellen

▶ Eingestellte Stückzahl entnehmen

▶ Stückzahl übernehmen

▶ Teile aus Behälter entnehmen

▶

▶

▶

▶

▶

▶

▶ Déposer récipient vide

▶ Démarrer comptage

▶ Régler nombre de pièces de référence

▶ Déposer nombre de pièces réglé

▶ Mémoriser nombre de pièces

▶ Remplir récipient

▶ Régler nombre de pièces de référence

▶ Déposer nombre de pièces réglé

▶ Mémoriser nombre de pièces

▶ Remplir récipient

▶ Déposer récipient rempli

▶ Démarrer comptage

▶ Régler nombre de pièces de référence

▶ Enlever le nombre de pièces réglé

▶ Mémoriser nombre de pièces

▶ Enlever les pièces du récipient

▶ Colocar recipiente vacío

▶ Iniciar contaje

▶ Ajustar cantidad piezas referencia

▶ Colocar cantidad piezas ajustada

▶ Memorizar cantidad piezas

▶ Llenar recipiente

▶ Ajustar cantidad piezas referencia

▶ Colocar cantidad piezas ajustada

▶ Memorizar cantidad piezas

▶ Llenar recipiente

▶ Colocar recipiente lleno

▶ Iniciar contaje

▶ Ajustar cantidad piezas referencia

▶ Retirar cantidad piezas ajustada

▶ Memorizar cantidad piezas

▶ Sacar piezas del recipiente

Collocare il contenitore vuoto

Avviare Conteggio

Impostare il numero di pezzi di riferimento

Collocare il numero di pezzi impostato

Memorizzare il numero di pezzi

Riempire il contenitore

Impostare il numero di pezzi di riferimento

Collocare il numero di pezzi impostato

Memorizzare il numero di pezzi

Riempire il contenitore

Collocare il contenitore riempito

Avviare Conteggio

Impostare il numero di pezzi di riferimento

Togliere il numero di pezzi impostato

Memorizzare il numero di pezzi

Togliere i pezzi dal contenitore

Colocar recipiente vazio na balança

Iniciar contagem

Seleccionar a quantidade de amostra em referência

Colocar a quanti-dade de amostra seleccionada na balança

Memorizar quantidade em referência

Encher recipiente

Seleccionar a quantidade de amostra em referência

Colocar a quanti-dade de amostra seleccionada na balança

Memorizar quantidade em referência

Encher recipiente

Colocar recipiente cheio na balança

Iniciar contagem

Seleccionar a quantidade de amostra em referência

Retirar a quantidade de amostra em referência

Memorizar quantidade em referência

Remover os artigos do recipiente

Placera
en tom behållare
på vågen

Starta
antalsräkning

Välj
referensantal

Placera
referensantalet
på vågen

Lagra
referensantalet

Fyll behållaren

Välj
referensantal

Placera
referensantalet
på vågen

Lagra
referensantalet

Fyll behållaren

Placera
fylld behållare
på vågen

Starta
antalsräkning

Välj
referensantal

Ta bort
referensantalet

Lagra
referensantalet

Ta bort
detaljerna från
behållaren

Aseta tyhjä astia
vaa'alle

Aloita
kappalelasku

Valitse
vertailukappaleiden
määrä

Laita valittu
vertailukappaleiden
määrä vaa'alle

Tallenna
vertailukappa-
lepaino

Täytä astia

Valitse
vertailukappaleiden
määrä

Laita valittu
vertailukappaleiden
määrä vaa'alle

Tallenna
vertailukappa-
lepaino

Täytä astia

Aseta täysi astia
vaa'alle

Aloita
kappalelasku

Valitse
vertailukappaleiden
määrä

Poista valittu
vertailukappale-
määrä vaa'alta

Tallenna
vertailukappa-
lepaino

Poista kappaleet
astiasta

- Tøm beholder på vægt
- Start tælling
- Vælg ref. antal
- Anbring ref. antal på vægt
- Gem ref. antal
- Fyld beholder

- Vælg ref. antal
- Anbring ref. antal på vægt
- Gem ref. antal
- Fyld beholder

- Anbring fuld beholder på vægt
- Start tælling
- Vælg ref. antal
- Fjern ref. antal
- Gem ref. antal
- Tøm beholder

- Plasser en tom beholder på vektplaten
- Start telling
- Velg antall referanser
- Plasser referansene på vektplaten
- Lagre antall referanser
- Fyll beholderen

- Velg antall referanser
- Plasser referansene på vektplaten
- Lagre antall referanser
- Fyll beholderen

- Plasser full beholder på vektplaten
- Start telling
- Velg antall referanser
- Fjern referansene fra vekten
- Velg antall referanser
- Fjern artikler fra beholderen

▶ Plaats lege container op de balans
▶ Start tellen
▶ Referentie aantal ingeven
▶ Plaats referentie aantal op de balans
▶ Referentie aantal opslaan
▶ Vul de container

▶ Referentie aantal ingeven
▶ Plaats referentie aantal op de balans
▶ Referentie aantal opslaan
▶ Vul de container

▶ Plaats de volle container op de balans
▶ Start tellen
▶ Referentie aantal ingeven
▶ Verwijder referentie aantal
▶ Referentie aantal opslaan
▶ Verwijder items uit de container

▶ Τοποθετήστε το άδειο δοχείο επάνω στον ζυγό
▶ Εκκινήστε το μέτρημα
▶ Επιλέξτε την ποσότητα αναφοράς του δείγματος
▶ Τοποθετήστε την ποσότητα αναφοράς στον ζυγό
▶ Αποθηκεύστε στην μνήμη την ποσότητα αναφοράς
▶ Γεμίστε το δοχείο

▶ Επιλέξτε την ποσότητα αναφοράς του δείγματος
▶ Τοποθετήστε την ποσότητα αναφοράς στον ζυγό
▶ Αποθηκεύστε στην μνήμη την ποσότητα αναφοράς
▶ Γεμίστε το δοχείο

▶ Τοποθετήστε το γεμάτο δοχείο στον ζυγό
▶ Εκκινήστε το μέτρημα
▶ Επιλέξτε την ποσότητα αναφοράς του δείγματος
▶ Αφαιρέστε την ποσότητα αναφοράς δείγματος
▶ Αποθηκεύστε στην μνήμη την ποσότητα αναφοράς
▶ Αφαιρέστε τα αντικείμενα από το δοχείο

- Постави празния контейнер на везната
- Започни броенето
- Избери референтно количество проба
- Постави референтното количество проба на везната
- Запиши референтното количество
- Напълни контейнера

- Избери референтно количество проба
- Постави референтното количество проба на везната
- Запиши референтното количество
- Напълни контейнера

- Постави напълнения контейнер на везната
- Започни броенето
- Избери референтно количество проба
- Отстрани референтното количество проба
- Запиши референтното количество
- Изпразни контейнера от съдържанието му

- Üres tartályt felhelyezni
- Számlálást indítani
- Referencia darabszámot beállítani
- Beállított darabszámot felhelyezni
- Darabszámot elmenteni
- Tartályt feltölteni

- Referencia darabszámot beállítani
- Beállított darabszámot felhelyezni
- Darabszámot elmenteni
- Tartályt feltölteni

- Teli tartályt felhelyezni
- Számlálást indítani
- Referencia darabszámot beállítani
- Beállított darabszámot elvenni
- Darabszámot elmenteni
- A tartályból egyes darabokat kivenni

▶ Поставьте пустой контей-нер на весы

▶ Старт Подсчёта

▶ Задайте справ. кол-во деталей

▶ Положите справ. кол-во деталей на весы

▶ Запомнить справ. кол-во деталей

▶ Наполните контейнер

▶ Задайте справ. кол-во деталей

▶ Положите справ. кол-во деталей на весы

▶ Запомнить справ. кол-во деталей

▶ Наполните контейнер

▶ Поставьте на-полненный кон-тейнер на весы

▶ Старт Подсчёта

▶ Задайте справ. кол-во деталей

▶ Выньте справ. кол-во деталей

▶ Запомнить справ. кол-во деталей

▶ Выньте детали из контейнера

▶ Postawić pusty pojemnik

▶ Start liczenia

▶ Zaprogramować referencyjną ilość szt.

▶ Położyć zapro-gramowaną ilość szt.

▶ Potwierdzić ilość sztuk

▶ Napełnić pojemnik

▶ Zaprogramować referencyjną ilość szt.

▶ Położyć zapro-gramowaną ilość szt.

▶ Potwierdzić ilość sztuk

▶ Napełnić pojemnik

▶ Postawić napełniony pojemnik

▶ Start liczenia

▶ Zaprogramować referencyjną ilość szt.

▶ Wyjąc zapro-gramowaną ilość szt.

▶ Potwierdzić ilość sztuk

▶ Wyjąc części z pojemnika

- Postavit prázdnou nádobu na váhu
- Startovat – Počítání
- Nastavit referenční množství kusů
- Na váhu položit nastavené množství kusů
- Převzít počet kusů
- Naplnit nádobu

- Nastavit referenční množství kusů
- Na váhu položit nastavené množství kusů
- Převzít počet kusů
- Naplnit nádobu

- Plnou nádobu postavit na váhu
- Startovat – Počítání
- Nastavit referenční množství kusů
- Vybrat nastavené množství kusů
- Převzít počet kusů
- Díly odebrat z nádobu

- Puneti recipientul gol pe balanţă
- Începeţi numărarea
- Selectaţi cantitatea probei de referinţă
- Puneţi proba de referinţă pe balanţă
- Salvaţi cantitatea de referinţă
- Umpleţi recipientul

- Selectaţi cantitatea probei de referinţă
- Puneţi proba de referinţă pe balanţă
- Salvaţi cantitatea de referinţă
- Umpleţi recipientul

- Puneti recipientul plin pe balanţă
- Începeţi numărarea
- Selectaţi cantitatea probei de referinţă
- Îndepărtaţi cantitatea probei de referinţă
- Salvaţi cantitatea de referinţă
- Îndepărtaţi piese din recipient

- Stavi prazan kontejner na vagu
- Startuj brojanje (merenje)
- Odaberi referentnu količinu uzorka
- Stavi refer. količinu uzorka na vagu
- Sačuvaj referentnu količinu
- Napuni kontejner

- Odaberi referentnu količinu uzorka
- Stavi refer. količinu uzorka na vagu
- Sačuvaj referentnu količinu
- Napuni kontejner

- Stavi pun kontejner na vagu
- Startuj brojanje (merenje)
- Odaberi referentnu količinu uzorka
- Ukloni referentnu količinu uzorka
- Sačuvaj referentnu količinu
- Ukloni komponente iz kontejnera

- Stavi prazni spremnik na vagu
- Početak brojenja
- Izaberi referentni iznos
- Postavi ref. uzorak na vagu
- Pohrani ref. količinu
- Napuni spremnik

- Izaberi referentni iznos
- Postavi ref. uzorak na vagu
- Pohrani ref. količinu
- Napuni spremnik

- Postavi puni spremnik na vagu
- Početak brojenja
- Izaberi referentni iznos
- Ukloni referentni uzorak
- Pohrani ref. količinu
- Ukloni predmete iz spremnika

▶ 将空容器放在秤上

▶ 开始计数

▶ 选定参考样品的数量

▶ 将选出的参考样品放在秤上

▶ 保存参考样品的数量

▶ 加入样品

▶ 选定参考样品的数量

▶ 将选出的参考样品放在秤上

▶ 保存参考样品的数量

▶ 加入样品

▶ 将装满参考样品的容器放在秤上

▶ 开始计数

▶ 选定参考样品的数量

▶ 移走参考样品

▶ 保存参考样品的数量

▶ 将容器清空

▶ ひょう量皿に容器を載せます。

▶ カウンティングを開始します。

▶ 基準サンプル個数を 選択します。

▶ 基準サンプル個数を容器に 入れます。

▶ 基準サンプル個数を保存します。

▶ 容器にサンプルを入れます。

▶ 基準サンプル個数を 選択します。

▶ 基準サンプル個数を容器に 入れます。

▶ 基準サンプル個数を保存します。

▶ 容器にサンプルを入れます。

▶ ひょう量皿にサンプルの入った容器を載せます。

▶ カウンティングを開始します。

▶ 基準サンプル個数を 選択します。

▶ 基準サンプル個数を容器から取り出します。

▶ 基準サンプル個数を保存します。

▶ 容器からサンプルを取り出します。

- วางภาชนะเปล่าบ
นเครื่องชั่ง
- เริ่มต้นนับชิ้น
- เลือกปริมาณ
อ้างอิง
- วางตัวอย่างต
ามปริมาณที่อ้างอิ
งลงบนเครื่องชั่ง
- บันทึกปริมาณ
อ้างอิง
- เติมตัวอย่างในภา
ชนะ

- เลือกปริมาณ
อ้างอิง
- วางตัวอย่างต
ามปริมาณที่อ้างอิ
งลงบนเครื่องชั่ง
- บันทึกปริมาณ
อ้างอิง
- เติมตัวอย่างในภา
ชนะ

- วางภาชนะที่มีตัว
อย่างบรรจุอยู่ลงบ
นเครื่องชั่ง
- เริ่มต้นนับชิ้น
- เลือกปริมาณ
อ้างอิง
- นำปริมาณอ้างอิง
ออกจากภาชนะ
- บันทึกปริมาณ
อ้างอิง
- นำตัวอย่างออกจา
กภาชนะ

- Đặt thuyền (vật
chứa) trống lên
đĩa cân
- Khởi động chức
năng đếm
- Chọn số lượng
vật chuẩn
- Đặt số vật chuẩn
đã chọn lên
đĩa cân
- Nhớ số lượng các
vật chuẩn
- Cho mẫu vào
thuyền cân

- Chọn số lượng
vật chuẩn
- Đặt số vật chuẩn
đã chọn lên
đĩa cân
- Nhớ số lượng các
vật chuẩn
- Cho mẫu vào
thuyền cân

- Đặt thuyền cân
chứa mẫu lên
đĩa cân
- Khởi động chức
năng đếm
- Chọn số lượng
vật chuẩn
- Lấy các vật
chuẩn ra
- Nhớ số lượng các
vật chuẩn
- Lấy các mẫu ra
khỏi thuyền cân

- Boş kabı terazinin üzerine koyun
- Sayımı başlatın
- Referans numune adedini seçin
- Referans adedi terazinin üzerine koyun
- Referans adedi kaydedin
- Kabı doldurun

- Referans numune adedini seçin
- Referans adedi terazinin üzerine koyun
- Referans adedi kaydedin
- Kabı doldurun

- Dolu kabı terazinin üzerine koyun
- Sayımı başlatın
- Referans numune adedini seçin
- Referans adedi kabın içinden alın
- Referans adedi kaydedin
- Numuneleri kaptan boşaltın

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